REMARKS

The present Amendment is in response to the Office Action mailed June 24, 2004 in the above-identified application. Enclosed herewith is a Petition requesting a three-month extension of time for resetting the deadline for responding to the Office Action from September 24, 2004 to and including December 24, 2004.

In the present Amendment, claims 1, 3, 5, 12, 13, 15 and 16 have been amended and claims 2, 4 and 14 have been canceled. Support for the amendment of claims 1, 3, 5, 12, 13, 15 and 16 is found in the originally filed specification.

In the Office Action, the Examiner rejected claims 1-2 and 15-16 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,556,431 to Buttner-Janz, which discloses an intervertebral disc endoprosthesis that is inserted between two vertebrae. The endoprosthesis includes a top plate 1 and a bottom plate 2, with a core 3 cooperating with concave inner faces 4 of the top and bottom plates 1, 2. Claim 1 is unanticipated by Buttner-Janz because the cited reference neither discloses nor suggests a spinal implant apparatus including

> a first member having a first vertebral contact surface for engagement with an endplate of a first vertebral bone in the spinal column and a first articulating surface, the entirety of the first articulating surface being a single saddle surface that is defined by a concave arc having a substantially constant radius of curvature A about a first axis perpendicular to an axis passing through leading and trailing ends of the first member and a convex arc having a substantially constant radius of curvature B about a first axis perpendicular to an axis passing through lateral ends of the first member.

Claim 1 is also unanticipated because Buttner-Janz neither discloses nor suggests a spinal implant apparatus including

> a second member having a second vertebral contact surface for engagement with an endplate of a second vertebral bone in the spinal column, and a second articulating surface in contact with the first articulating surface, the entirety of the second articulating surface being a single saddle surface that

> is defined by a convex arc having a substantially constant radius of curvature C about a first axis perpendicular to an axis passing through leading and trailing ends of the second member and a concave arc having a substantially constant radius of curvature D about a second axis perpendicular to an axis passing through lateral ends of the second member.

Claim 1 is also unanticipated because Buttner-Janz neither discloses nor suggests a device having first and second members that are

> operable to articulate relative to one another, when disposed in the intervertebral disc space, about at least one of: (i) a first center of rotation for at least one of flexion and extension that is located above the first and second articulating surfaces, and (ii) a second center of rotation for lateral bending that is located below the first and second articulating surfaces.

For the above reasons, claim 1 is unanticipated by Buttner-Janz and is otherwise allowable. Claims 15 and 16 are unanticipated for essentially the same reasons as set forth above with respect to claim 1. Claim 2 has been cancelled, thereby rendering moot the Section 102(b) rejection under Buttner-Janz.

The Examiner rejected claims 1-16 under 35 U.S.C. § 102(b) and being anticipated by U.S. Patent No. 6,039,763 to Shelokov. Referring to FIGS. 1A-1C and 2A-2C thereof, Shelokov discloses an artificial disk including a first plate 1 and a second plate 10. Referring to FIGS. 1A-1C, the first plate 1 has a substantially flat superior surface 2 and an opposing articulating inferior surface 3 having two laterally juxtaposed convex portions 4, 5. Referring to FIGS. 2A-2C, the second plate 10 includes a substantially flat inferior surface 11 and an articulating superior surface 12 having two laterally juxtaposed concave portions 13, 14. Referring to FIGS. 3A-3B, as the upper and lower plates 21, 22 articulate along their articulating surfaces 25, 26 the first plate 21 will move in the direction indicated by the arrow B from the home position depicted in FIG. 3A to a second position depicted in FIG. 3B. In the home position, the plates 21, 22, share a common center of rotation (23a,b). However, when the upper plate 21 is articulated to a

second position as depicted in FIG. 3B, the instant centers of rotation 23a, 23b are no longer coincident. Therefore, when a patient using the present device bends in a forward or backward manner, the instant centers of rotation 23a, 23b will be displaced away from each other in an anteroposterior fashion, i.e., there will be an anteroposterior translation of the instant center of rotation 23b with respect to the instant center of rotation 23a.

FIGS. 4A and 4B of Shelokov depict partial cross-sectional rear, or posterior, elevation views of an artificial spinal disc 30 having a first superior plate 31 and a second inferior plate 32. The first superior plate 31 has a bicondylar articulating surface that articulates with a bimodal concave articulating surface 34 of the second plate 32. The plates 31, 32 are depicted in a home or neutral position. However, when the first plate 31 is translated laterally along the arrow T with respect to the second plate 32, the first plate 31 will tilt slightly with respect to the second plate 32 and the instant centers of rotation 35a, 35b will be displaced from one another. Thus, the Shelokov artificial spinal disc provides first and second articulating surfaces that are adapted to provide a changing center of rotation when the articulating surfaces are translated or articulated with respect to one another in a lateral-to-lateral fashion.

Claim 1 of the present application is unanticipated by Shelokov because the cited reference neither discloses nor suggests a spinal implant apparatus including a first member having

> a first articulating surface, the entirety of the first articulating surface being a single saddle surface that is defined by a concave arc having a substantially constant radius of curvature A about a first axis perpendicular to an axis passing through leading and trailing ends of the first member and a convex arc having a substantially constant radius of curvature B about a first axis perpendicular to an axis passing through lateral ends of the first member.

Claim 1 is also unanticipated by Shelokov because the cited reference neither discloses nor suggests an apparatus including a second member having

> a second articulating surface in contact with the first articulating surface, the entirety of the second articulating surface being a single saddle surface that is defined by a convex arc having a substantially constant radius of curvature C about a first axis perpendicular to an axis passing through leading and trailing ends of the second member and a concave arc having a substantially constant radius of curvature D about a second axis perpendicular to an axis passing through lateral ends of the second member.

Claim 1 is also unanticipated because Shelokov neither discloses nor suggests an apparatus including first and second members having opposing articulating surfaces including "a first center of rotation for at least one of flexion and extension that is located above the first and second articulating surfaces" and "a second center of rotation for lateral bending that is located below the first and second articulating surfaces." Claims 3 and 5-13 are unanticipated, *inter alia,* by virtue of their dependence from claim 1, which is unanticipated for the reasons set forth above. Claims 15 and 16 are unanticipated for essentially the same reasons set forth above with respect to claim 1. Claims 2, 4 and 14 have been canceled, thereby rendering moot the Section 102(b) rejection of these claims under Shelokov.

The Examiner rejected claims 1-9 and 11-16 under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent Publication No. 2004/0024462 to Ferree et al. In response, Applicants respectfully assert that claim 1 is unanticipated by Ferree because the cited reference neither discloses nor suggests first and second members having opposing first and second saddle shaped articulating surfaces whereby "the constant radius of curvature A is non-congruent with the constant radius of curvature C and the constant radius of curvature B is non-congruent with the constant radius of curvature D." Claims 3, 5-9 and 11-13 are unanticipated, *inter alia,* by virtue of their dependence from claim 1. Claims 15 and 16 are unanticipated for

essentially the same reasons set forth above with respect to claim 1.

The Examiner also rejected claims 1-9 and 11-16 under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,706,068 to Ferree. Claim 1 is unanticipated by the Ferree '068 patent because the cited reference neither discloses nor suggests a spinal implant apparatus including

> a first member having a first vertebral contact surface for engagement with an endplate of a first vertebral bone in the spinal column and a first articulating surface, the entirety of the first articulating surface being a single saddle surface that is defined by a concave arc having a substantially constant radius of curvature A about a first axis perpendicular to an axis passing through leading and trailing ends of the first member and a convex arc having a substantially constant radius of curvature B about a first axis perpendicular to an axis passing through lateral ends of the first member.

Claim 1 is also unanticipated by the Ferree '068 patent because the cited reference does not disclose a spinal implant apparatus including

> a second member having a second vertebral contact surface for engagement with an endplate of a second vertebral bone in the spinal column, and a second articulating surface in contact with the first articulating surface, the entirety of the second articulating surface being a single saddle surface that is defined by a convex arc having a substantially constant radius of curvature C about a first axis perpendicular to an axis passing through leading and trailing ends of the second member and a concave arc having a substantially constant radius of curvature D about a second axis perpendicular to an axis passing through lateral ends of the second member

Claims 3, 5-9 and 11-13 are unanticipated, *inter alia,* by virtue of their dependence from claim 1, which is unanticipated for the reasons set forth above. Claims 15 and 16 are unanticipated for essentially the same reasons set forth above with respect to claim 1.

Applicants have amended the claims in the present application in order to obtain prompt allowance of the case. Applicants respectfully note that they intend to pursue claims

in related or continuing applications that are of a broader scope than the claims currently pending in this application.

As it is believed that all of the rejections set forth in the Official Action have been fully met, favorable reconsideration and allowance are earnestly solicited.

If, however, for any reason the Examiner does not believe that such action can be taken at this time, it is respectfully requested that she telephone Applicants' attorney at (908) 654-5000 in order to overcome any additional objections which she might have.

If there are any additional charges in connection with this requested amendment, the Examiner is authorized to charge Deposit Account No. 12-1095 therefor.

Dated: December 20, 2004

Respectfully submitted,

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